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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,789	12/10/2003	Mehmet Yunt	MWS-087	8948

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EXAMINER	
VU, TUAN A	

ART UNIT	PAPER NUMBER
2193	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/733,789	YUNT ET AL.	
	Examiner	Art Unit	
	Tuan A. Vu	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-83* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-83* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the Applicant's response filed 6/25/07.

As indicated in Applicant's response, claims 1, 39, 77 have been amended. Claims 1-83 are pending in the office action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-83 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *the Mathworks*, 'Simulink: Model-based and System-based Design', *Using Simulink*, Version 5, copyright 1990-2002, last printed July 2002, ch. 2-11, 13-14; url: <http://aer.ual.es/docencia_es/iai/archivos/simulink.pdf> (hereinafter Simulink5), further in view of Chandhoke et al, USPubN: 2003/0144751(hereinafter Chandhoke)

As per claim 1, Simulink5 discloses a method in a graphical modeling and execution environment, the method comprising the steps of:

providing a model view and an execution list view of a model being executed (ch. 2: pg. 2-10→2-24; ch.13: pg. 13-17→13-19), said model view graphically depicting a plurality of components of said model, said execution list view depicting execution list depicting the execution order of methods called (e.g. *Time Step, Math Function block, Sum block, Product block* - pg. 2-10,11; 2-19,20; ch. 5: pg. 5-16→5-17) during the execution of a time step (e.g. ch. 10: pg. 10-40) of said model, the execution list to list the methods that have been called during

the time step until a specified point in execution of the time step (e.g. ch. 10: pg. 10-40); said model view interfaced with a debugger; and

indicating visually a execution list to list the methods that have been called (e.g. ch. 5: pg. 5-16→5-24; ch. 13: pg. 13-20—13-26) on said model view at the specified point in the time step (Note: depicting of blocks in a visual debugging tool inherently teaches instant view at a given or specified point in a time step).

However, Simulink5 does not explicitly teach that the execution list depicted during the execution of a time step is **dynamically updated and changing** during the execution of the model, nor does Simulink5 disclose indicating a **state of said dynamically updated** execution list at the specified point. Using a Simulator tool to observe dynamic changes to a graphical representation of the methods being called to provide operational and visual effects was a well-known concept with Simulation methodologies. And Simulink5 provides this dynamic representation of blocks representing the underlying methods being called by the user-input directed simulating environment (see ch. 2-19 to 2.33 – Note: any user readjusting is being reflected in subsequent display of timing diagram of blocks in execution). In an analogous approach as to using Simulator tool to effect simulation of parts of devices as in Simulink5, Chandhoke teaches representing evolution of blocks or operations being simulated according to a stepping paradigm and further provide dynamic redisplay of the state of these blocks being changed by the user so to depict the update effectuated by the dynamic input by the user (e.g. Fig 5; see para 0129-0134, pg. 9-11). It would have been obvious for one skill in the art to provide Simulink5's dynamic display of blocks in the user-driven tool wherein representation of the blocks is listed during a step execution flow as set forth above, so that the effect of the user's

input is reflected dynamically on this block execution for this update to be immediately depicted **as a dynamically updated list indicating state of the dynamic update** thereof because this enables the user to assess on the extent of the data being modified, and keep it as preview information needed to impart program code change for future readjusting of any potential prototype with knowledge based on attributes and properties being imparted to the step execution, the output thereof as fed back in form of the dynamic visual update as contemplated in Chandhoke's approach to preview effect of changes and to implement them more efficiently (see para 0137-0167, pg. 10-11, e.g. *updated dynamically, preview ... visually indicate the change* - para 0164, col. 11).

As per claims 2-3, Simulink5 discloses displaying a visual indicator indicating an association between an executing block method and a calling block on said model view (pg. 2-19—2-20, pg. 2-31; pg. 14-24); indicator indicating an association between a currently executing system method and a subsystem block owner (pg. 2-22,23; pg. 2-32; pg. 14-24,25) of said currently executing system method on said model view.

As per claim 4, Simulink5 discloses creating a visual representation of a model component not previously displayed in said model view, said model component calling a method; and displaying a visual indicator indicating an association between the visual representation of the model component not previously displayed and the method called by the model component (*refine output* – pg. 2-17; ch. 10: pg. 10-14→10-20).

As per claim 5, Simulink5 discloses extending a visual indicator from an originating point to a first called method depicted in said model view; and extending sequentially said visual indicator to at least one of each subsequently called method depicted in said model view and a

virtual subsystem in said model view during a time step in said execution (*propagating, link...nonstructural* - pg. 5-28).

As per claims 6-7, Simulink5 discloses indicating the type of method executing in said model view; as a visual indication (ch. 14: pg. 14-24,25).

As per claim 8, Simulink5 discloses visual indication is made by one of altering the color of a portion of a model component in said model view representing said method (see pg. 4-5-→4-17; pg. 5-15) and inserting a geometric design (pg. 4-17-4-21, 4-36 – Note: subsystem of sinusoidal functions or entering a diagram representing a circuit for annotating input **reads on** geometric design) in a model component displayed in said model view.

As per claims 9-10, see visible breakpoints in said model view and conditional breakpoints (e.g. ch. 13: *conditional breakpoints* - pg. 13-12 → 13-15; ch. 13: pg. 13-24).

As per claim 11, Simulink5 discloses arranging said execution list view to show the methods executed in a current time step in the execution of said model in a tree structure (tree – ch. 5: pg. 5-18→5-33).

As per claims 12-13, Simulink5 discloses that a user sets visible breakpoints in said execution list view; wherein said breakpoints are conditional breakpoints (see claim 9-10; pg. 13-24).

As per claim 14, Simulink5 discloses setting at least one a trace point and a display point in at least one of said model view and said execution list view (see pg. 13-14-→ 13-26).

As per claims 15-16, Simulink5 discloses generating at least one of debugging data and profiling data (ch. 14: pg. 14-21) during the execution of said model;

associating said at least one of debugging data and profiling data with at least one of said components of said model; and

visually indicating said associated data in said model view (Profile Summary: pg. 14-21→14-27);

wherein said associated data includes solver data (Note: using profile to support data solving with accelerator reads on solver data being associated with model components under profiling execution).

As per claim 17, Simulink5 discloses generating debugging data with said debugger during the execution of said model; associating said debugging data with at least one of said components of said model; and visually indicating said associated data in said execution list view (see ch. 13-17-→13-25).

As per claim 18, Simulink5 discloses the number of iterations of at least one of said plurality of model components during a time step in said execution (e.g. pg. 13-19; pg. 4-42).

As per claims 19-20, Simulink5 discloses selecting a user-set speed parameter via a control associated with said model view; and executing said model in said model view based on the selected speed parameter (pg. 10-41; *parameters dialog box* -pg. 14-6) selecting a user-set speed parameter via a control associated with said execution list view; and executing said model in said execution list view based on the selected speed parameter (Note: setting up accelerator for simulation reads on parameter control associated with execution list – see claim 1).

As per claim 21, Simulink5 discloses receiving input from a user-controlled input device in said graphical modeling and execution environment, said input being interpreted by said graphical modeling and execution environment as a user-selected speed parameter; and

executing said model in said execution list view based on the selected speed parameter (refer to claims 19-20 for analogous subject matter based on user input and control parameter at tool graphical level).

As per claims 22-23, Simulink5 discloses altering at least one of a connection between said model components and at least one of said model components; and adjusting at least one of said execution list view and said model view to indicate the effects of said altering (e.g. ch. 4: pg. 4-9 → 4-19; ch. 2: pg. 2-10→1-16; pg. 6-7→6-24; refer claims 19-20); wherein said altering step includes at least one of the adding and removing of at least one of model components and a connection between said model components (ch. 4; pg. 6-7→6-24).

As per claim 24, Simulink5 discloses displaying elements of the compiled state (e.g. *CompiledSampleTime* -pg. 2-28; *compiled model* - pg. 14-4,5) of said model in said model view.

As per claims 25-26, Simulink5 discloses displaying debug information from said debugger to a user in said model view as a tool tip (e.g. *tooltip* – pg. 3-6) over a component of said model in response to user input; wherein the displayed information indicates a signal value (pg. 6-29→6-31) of a signal line in said model view.

As per claims 27-28, Simulink5 discloses wherein the displayed information is made persistent in said model view (see pg. 4-76; 5-20; 10-23); wherein said displayed information is updated in response to the execution of said model (ch. 2: pg. 2-11→2-19; pg. 4-76).

As per claims 29-31, Simulink5 discloses displaying debug information from said debugger to a user in said execution list view as a tool tip in response to the movement of a pointing device (pg. 3-6; tootip – pg. 14-16; *Navigating, masked* - pg. 9-9, 9-12; *clicking* - pg. 14-26 – Note: tooltip shown as a result of a cursor navigating move during analyzing state of

simulation or modeling **reads on** debug information for each block of models being setup or executed as seen in pg. 14-37) in said execution list view over a component of said model associated with said debug information; wherein the displayed information is made persistent in said execution list view (Note: any data displayed for an instance of simulation is persistent for said list of execution instance); wherein said displayed information is updated in response to the execution of said model (refer to claim 28).

As per claim 32, Simulink5 discloses filtering the displayed execution list of methods in said execution list view so that only methods satisfying (ch. 9: pg. 9-2→9-7) a user-specified criteria are displayed.

As per claims 33-34, see (pg. 4-70, 79; pg. 14-25) for creating a record for each unique method invocation; and displaying data associated with said unique method invocations as they are called; anchoring said record to a block owner of (*clicking*- pg. 14-24→14-26; pg. 9-12; pg. 13-21,23) said unique method invocation in said model view (Note: one parent block reads on method invocation being unique).

As per claims 35-36, Simulink5 discloses displaying the calling of said unique method invocation with varying degrees of intensity representative of the frequency of the invocation (ch. 14: pg. 14-24→14-25); creating a unique method invocation for an execution exception event (*error message, error dialogue* -- ch. 2: pg. 2-23, 24; pg. 7-13,14; pg. 10-36).

As per claim 37, Simulink5 discloses wherein a user sets non-visible breakpoints (ch. 13: pg. 13-24 – Note: programmatic breakpoints being conditional to execution reads on non-visible) in at least one of said model view and said execution list view.

As per claim 38, Simulink5 discloses wherein at least one of a set of debugging data and a set of profiling data are displayed to a user in a separate view (*help browser* – pg. 14-23).

As per claim 39, Simulink5 discloses a medium holding computer-executable instructions for performing debugging in a graphical modeling and execution environment on an electronic device, said medium executable on said electronic device for performing a method, said method comprising instructions:

providing a model view and an execution list view an execution list depicting the execution order of methods called … time step … with a debugger;

indicating visually the state of the execution … model view;

all of which steps having been addressed in claim 1 which recites the same corresponding limitations.

Simulink5 does not explicitly teach that graphical view of the execution list depicted during the execution of a time step is such that the execution list is dynamically updated and changing during the execution of the model to list the methods that have been called, nor does Simulink5 disclose indicating a state of said dynamically updated execution list. But this limitation has been addressed in claim 1 as obvious from above.

As per claims 40, 41 and 42-43, refer to rejection of claims 2, 3, and 5, respectively.

As per claims 44-76, refer to claims 6-38 respectively for corresponding rejection.

As per claim 77, Simulink5 discloses in a graphical design environment, a system comprising:

a debugger storage, said debugger gathering debug information from the simulation of a model in said graphical design environment (ch. 2; ch. 13); a display device in communication with the design environment, said device displaying:

a model view, said model view displaying a plurality of components of a model and being interfaced with said debugger; and

an execution list view, said execution list view displaying an execution list (ch. 2: pg. 2-10→2-24; ch.13: pg. 13-17→13-19) depicting an execution order of methods called during the execution of a time step of said model, said execution list view state being visually represented (*Time Step, Math Function block, Sum block, Product block* - pg. 2-10,11; 2-19,20; ch. 5: pg. 5-16→5-17) on said model view, said execution list view being generated by said debugger.

However, Simulink5 does not explicitly teach that graphical view of the execution list depicted during the execution of a time step is such that the execution list is dynamically updated and changing during the execution of the model to list the methods that have been called, nor does Simulink5 disclose indicating a state of said dynamically updated execution list. But this limitation has been addressed in claim 1 as obvious in combination with Chandhoke from above.

As per claims 78-79, refer to claims 2-3 (refer to claim 1 for block order).

As per claim 80, refer to claims 12 and 14;

As per claims 81-83, refer to claims 13, 6, and 8 respectively for corresponding rejection.

Response to Arguments

4. Applicant's arguments filed 6/25/07 have been fully considered but they are moot in view of the new grounds of rejection. In light of the amendments necessitating new grounds of

rejection, the previously submitted arguments are now moot; and the currently pending claims stand herein rejected according to the present Office Action.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (571) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571)272-3756.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence - please consult Examiner before using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan A Vu
Patent Examiner,
Art Unit 2193
August 05, 2007